



오픈소스 기반 레드햇 클라우드 기술

Red Hat, Inc.
Senior Solution Architect
최원영 부장
wchoi@redhat.com

Agenda

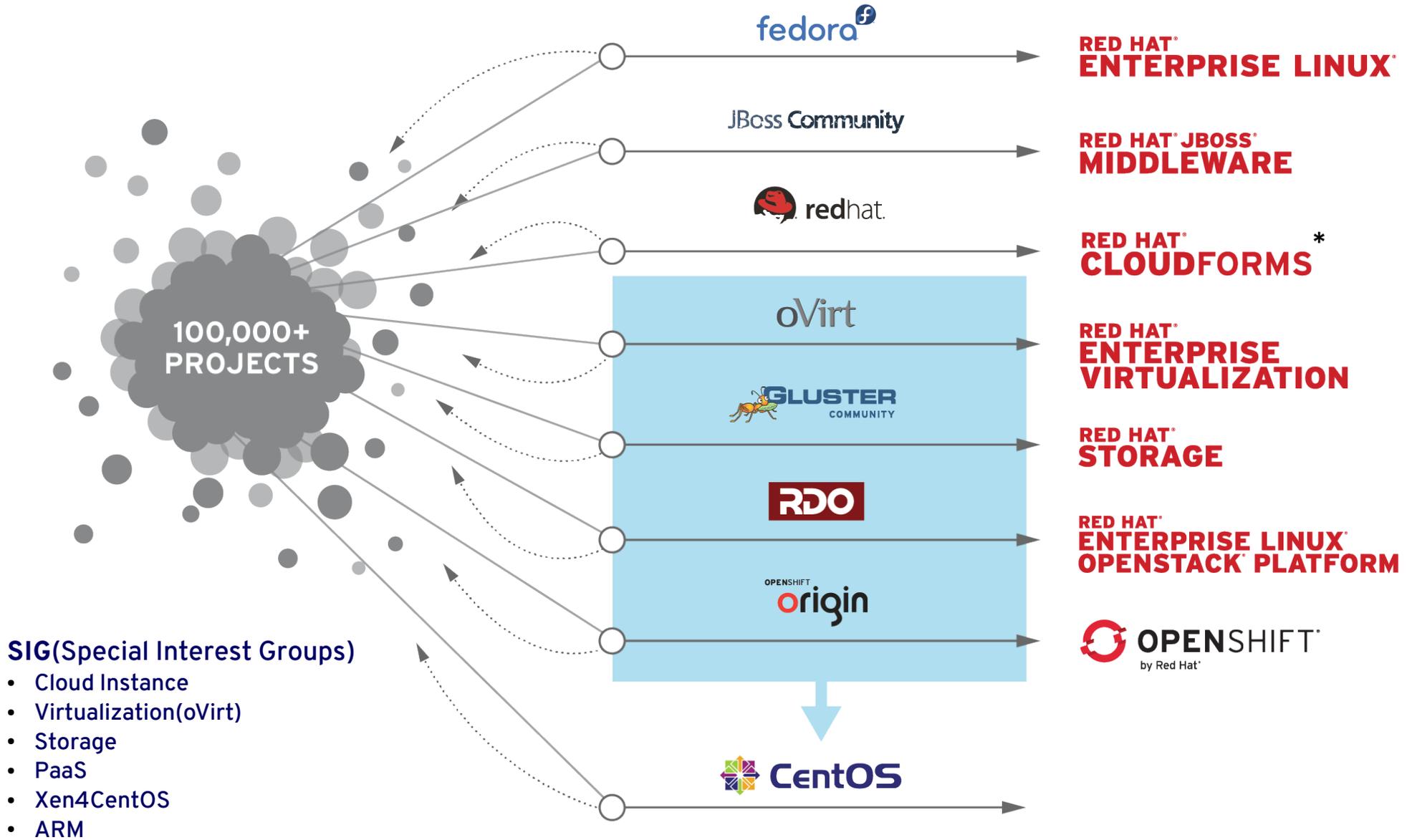
- **오픈소스 트렌드 전망**
- **Red Hat Enterprise Virtualization**
- **Red Hat Enterprise Linux OpenStack Platform**
- **Open Hybrid Cloud**

Red Hat 오픈소스 트렌드 전망 2014

- 대세로 떠오른 Hybrid Cloud
- 오픈소스 기술의 지속적인 확대
- 기업의 IaaS 도입 증대
- 융합을 통한 Business-Driven-Cloud로의 진화
- 컴퓨팅 및 스토리지 통합으로 IT 운영 체계 개편
- 오픈소스 클라우드 생태계 변화
- 리눅스 컨테이너 급부상
- 다양한 분야에서의 가상화 도입 급증 (ex. NFV)
- SDN을 넘어서 SDx 세상 도래
- 정부 및 공공기관의 가상화 클라우드 도입 증가



클라우드 기반 기술 커뮤니티를 활성화



SIG(Special Interest Groups)

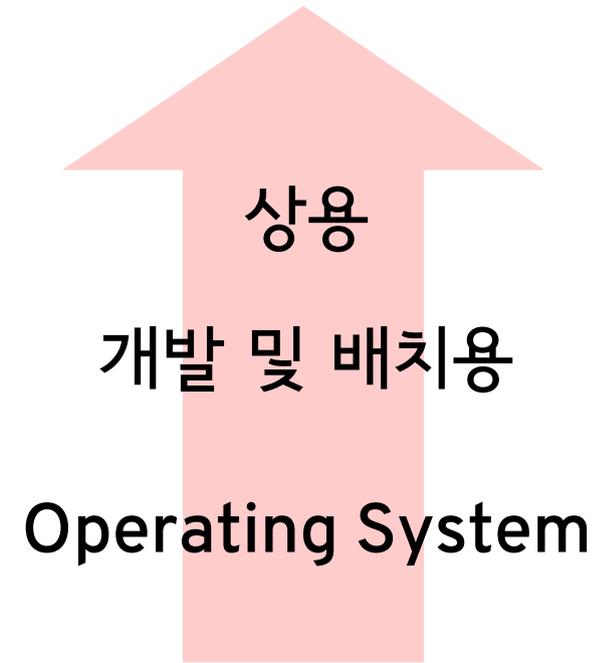
- Cloud Instance
- Virtualization(oVirt)
- Storage
- PaaS
- Xen4CentOS
- ARM

...

* Red Hat CloudForms is being opensourced now by Red Hat – a \$100MM investment in the community

FEDORA - CENTOS - RHEL

레드햇과 CentOS 프로젝트는
오픈스택과 같은 차세대 오픈소스 프로젝트를 위한 커뮤니티 도입 및 혁신을 장려하기 위해 협력을 강화



Agenda

- 오픈소스 트렌드 전망
- **Red Hat Enterprise Virtualization**
- Red Hat Enterprise Linux OpenStack Platform
- Open Hybrid Cloud - Red Hat Cloud Infrastructure

oVirt (<http://ovirt.org>)

- Red Hat Enterprise Virtualization 의 Community
 - Red Hat Storage Management Console 포함
- 가상화 및 private cloud 관리 기술

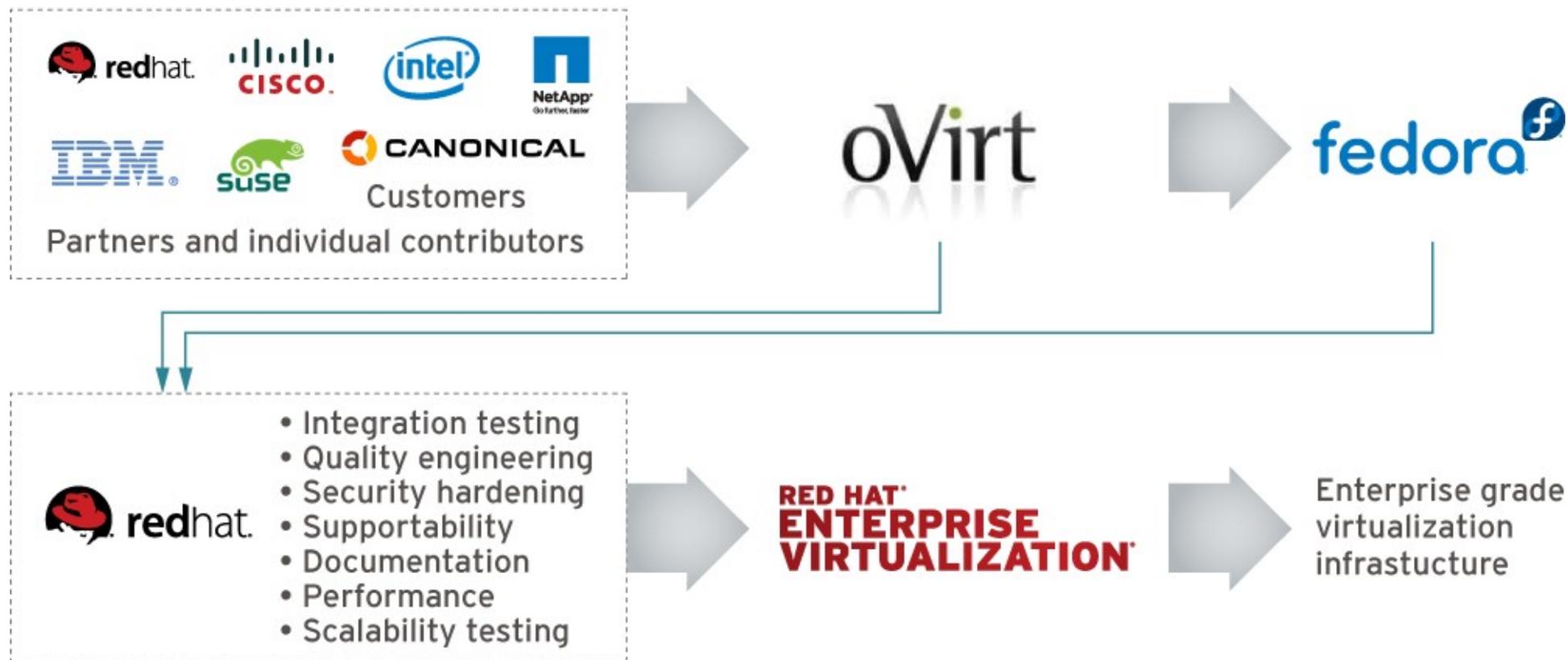
The screenshot displays the oVirt Engine web interface. The top navigation bar shows the user is logged in as 'q-student'. The left sidebar contains navigation links for Virtual Machines, Templates, and Resources. The main content area is divided into several panels:

- Virtual CPUs:** Shows a quota summary of 'Unlimited' and usage for 'specific_st' (Unlimited), 'global_vds' (25%), and 'global_st' (0%).
- Memory:** Shows a quota summary of '22%' and usage for 'specific_st' (0%), 'global_vds' (13%), and 'global_st' (0%).
- Storage:** Shows a quota summary of '47%' and usage for 'specific_st' (Exceeded), 'global_vds' (100%), 'global_st' (67%), and 'specific_vds' (10%). A tooltip indicates 'Exceeded 20% / 1.0GB' for the 'global_vds' entry. To the right, a summary table shows:

Total Size:	2GB
Number of Snapshots:	2
Total Size of Snapshots:	<1GB
- Virtual Machines' Disks & Snapshots:** A table listing disks and snapshots for various VMs:

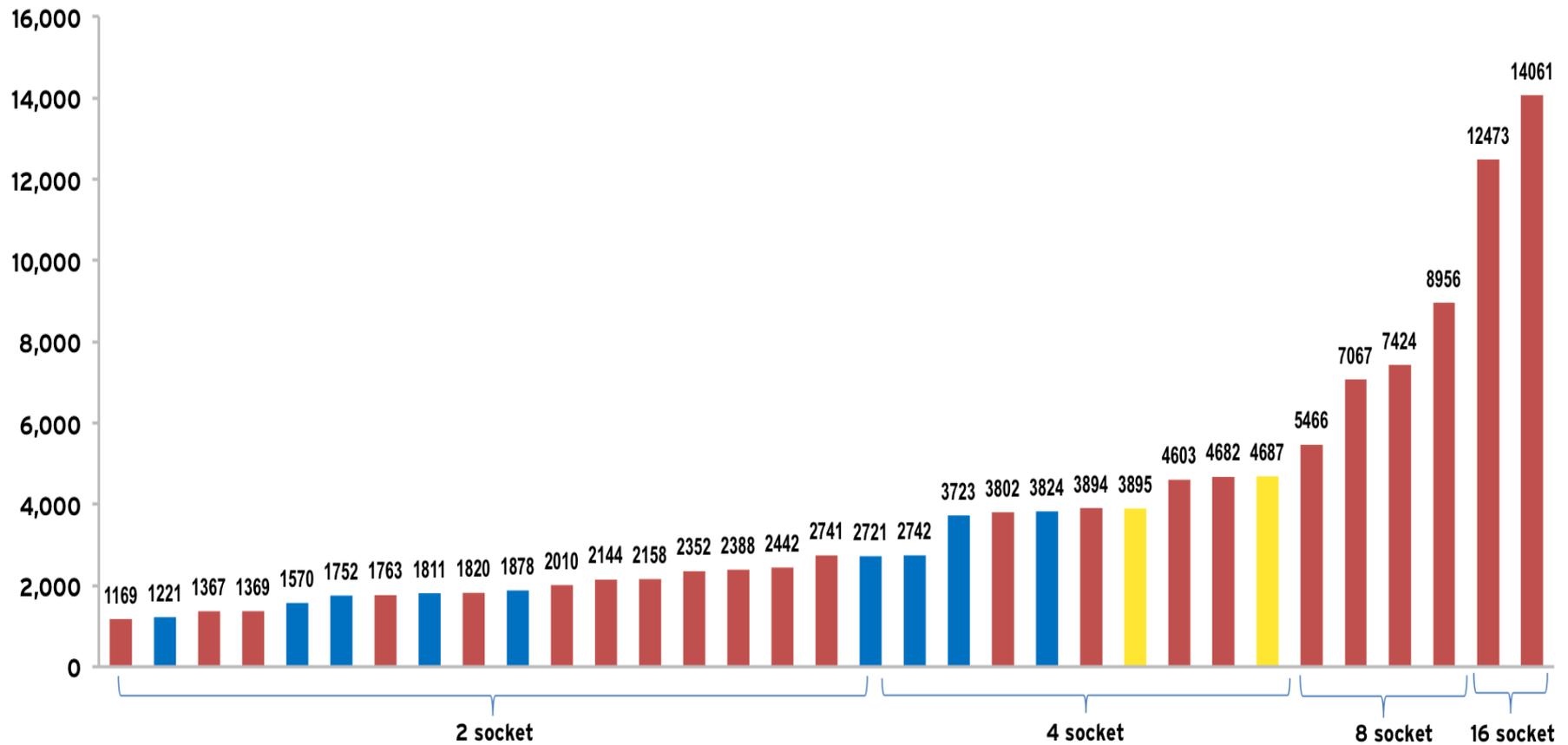
Description	Disks	Virtual Size	Actual Size	Snapshots
myvm	1	1GB	0GB	1
myvm_Disk1	myvm_Disk1	1GB	0GB	1
rt	0	0GB	0GB	0
sec	1	1GB	0GB	1
sec_Disk1	sec_Disk1	1GB	0GB	1
z	0	0GB	0GB	0

INDUSTRY LEADERSHIP: OPEN VIRTUALIZATION INFRASTRUCTURE



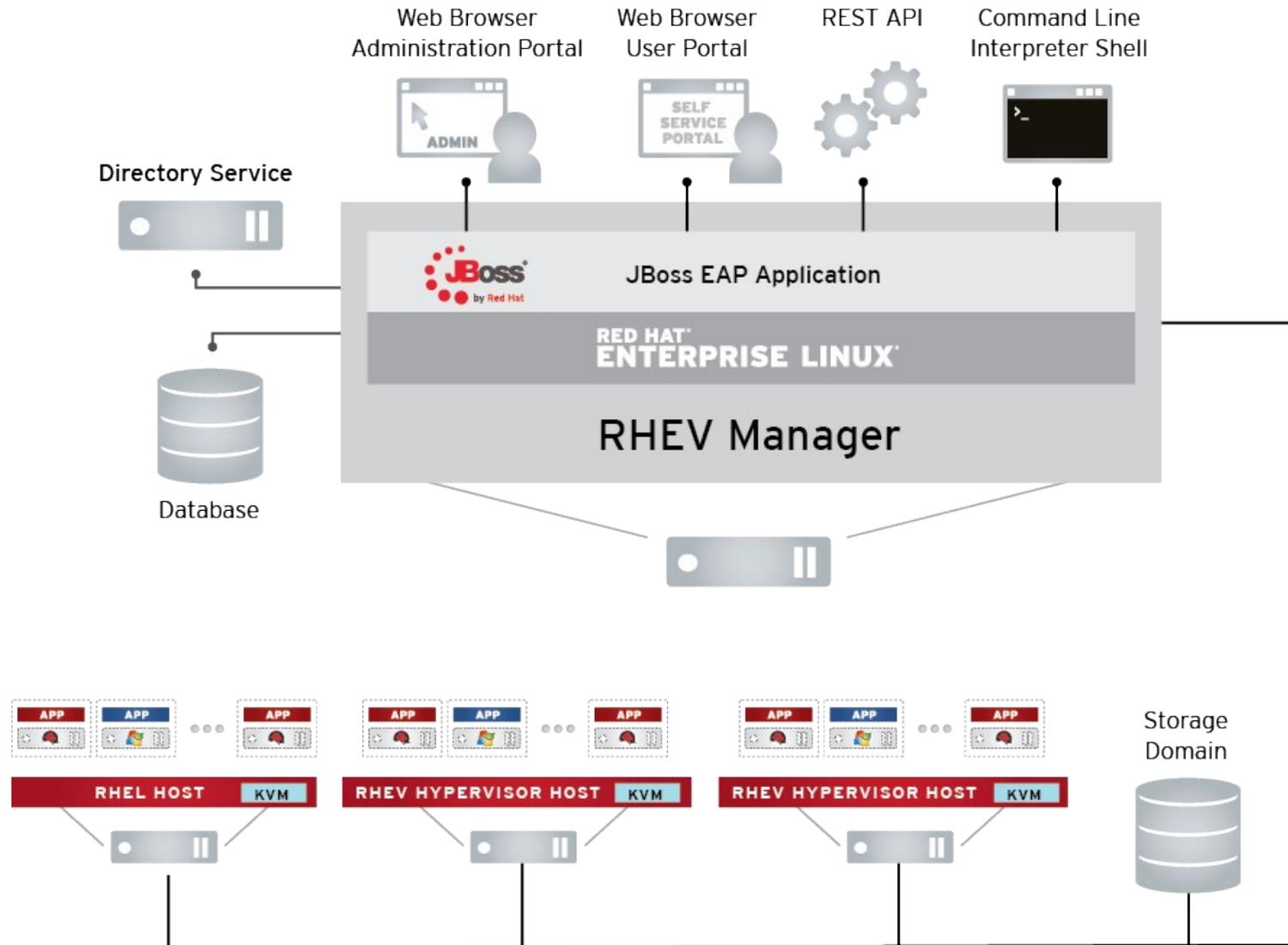
**INDUSTRY LEADERS IN INFRASTRUCTURE, NETWORKING, AND
STORAGE ARE BACKING RED HAT ENTERPRISE VIRTUALIZATION**

INDUSTRY-LEADING VIRTUALIZATION PERFORMANCE

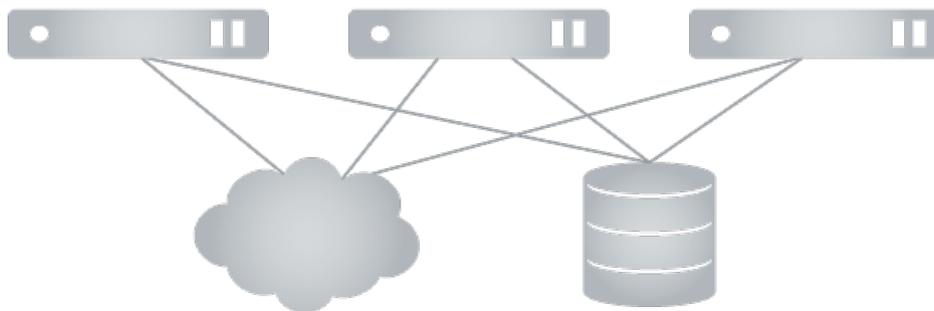
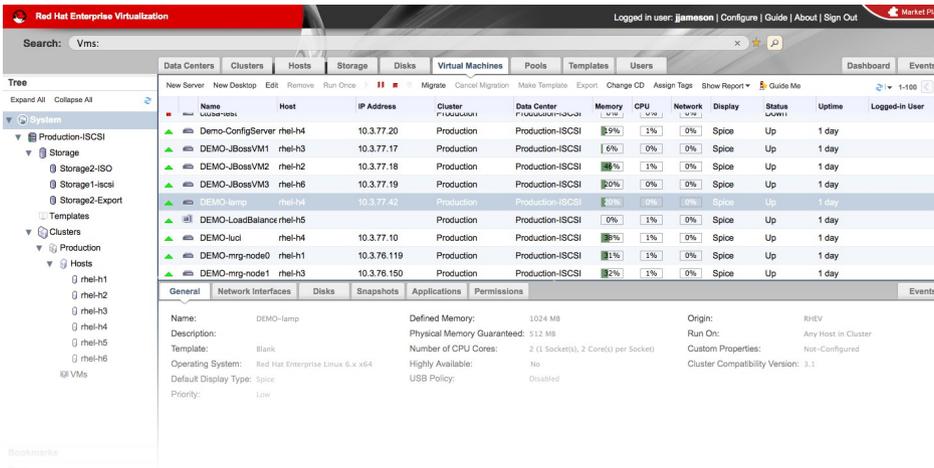


SPECvirt_sc2010: As of November 15, 2013, Red Hat Enterprise Virtualization claims 10 of the top 15 results and the only 8-socket and 16-socket server scores.

RED HAT ENTERPRISE VIRTUALIZATION ARCHITECTURE



RED HAT ENTERPRISE VIRTUALIZATION MANAGER FEATURES

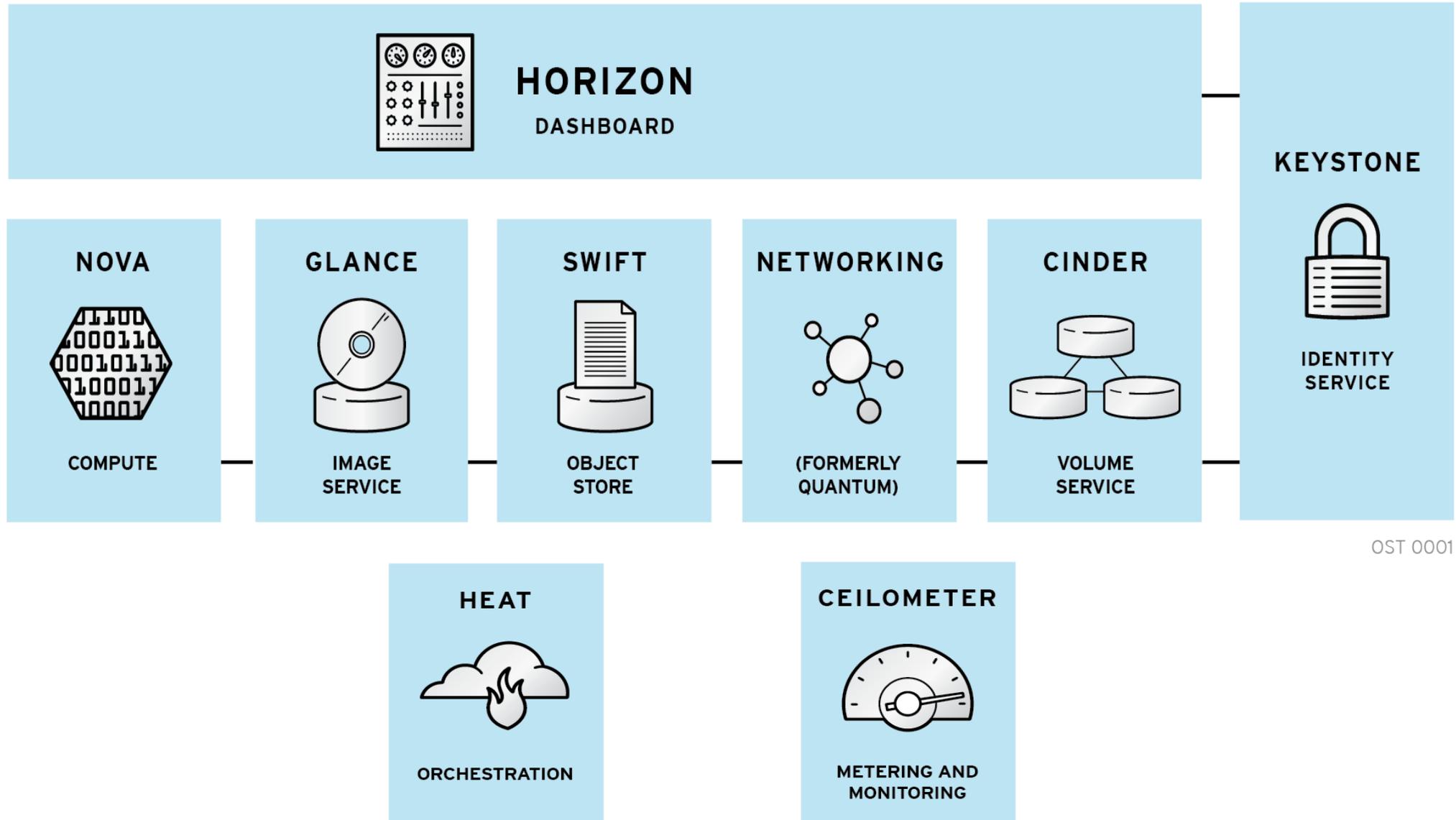


- High availability
- Live migration
- Storage live migration
- Live snapshots
- Load balancing (DRS)
- Power saver (DPM)
- Hot-plug disk and NIC
- Storage on local disk, FC, iSCSI, NFS, Red Hat Storage, IBM GPFS, POSIX or Direct LUN
- Self-service portal with quotas
- Integrated Red Hat Storage management*
- Eco-system marketplace
- Third-party UI plugin support
- * Technology preview

Agenda

- 오픈소스 트렌드 전망
- Red Hat Enterprise Virtualization
- **Red Hat Enterprise Linux OpenStack Platform**
- Open Hybrid Cloud - Red Hat Cloud Infrastructure

OpenStack - Cloud OS



OST 0001

OpenStack 기여도 비교

Corporate contributions to OpenStack

OPENSTACK HAVANA RELEASE

(04 APR to 16 OCT 2013)



* Includes only the top 35.



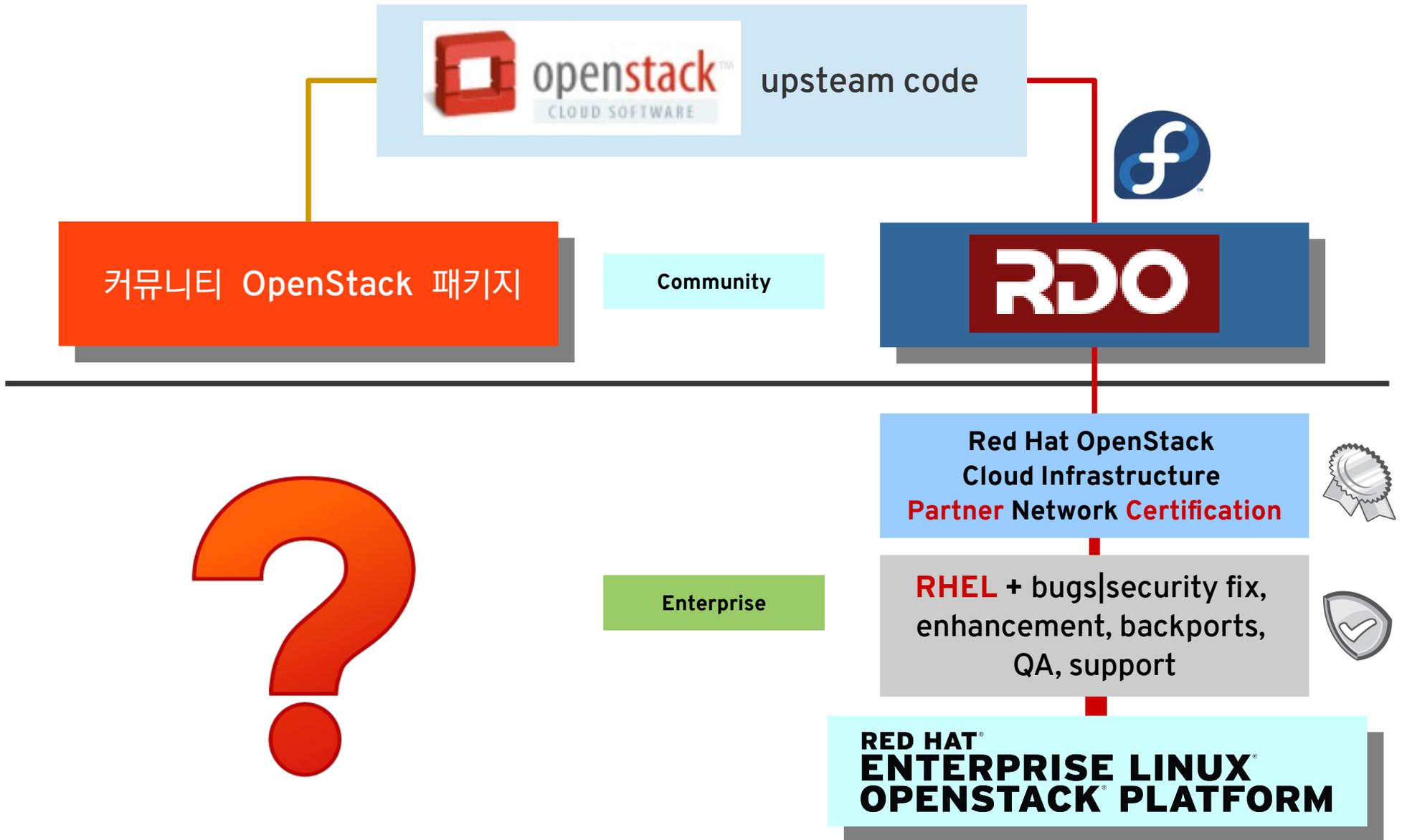
Source: Bitergia OpenStack Havana Analysis, October 17, 2013
blog.bitergia.com/2013/10/17/the-openstack-havana-release

Red Hat 의 OpenStack 접근

- RHEL 은 오픈소스 상용 제안에 있어 에코시스템의 가치를 보여주는 좋은 사례
- Red Hat 은 OpenStack 에코시스템을 구축



OpenStack 제품화의 차이점



가상화와 클라우드의 엔터프라이즈 기능 비교

Feature	RHEV	RHEL OpenStack Platform
Live migration	YES	NO
Storage live migration	YES	NO
VM-level HA	YES	NO
System Scheduler	YES, dynamic	YES, BUT at VM creation only
Storage on NFS, iSCSI	YES	YES
Storage on FC	YES	NO
Self-service	YES, fully featured in RHEV or CloudForms	YES, but very basic through Horizon
Administrator GUI	YES, fully featured with RHEV Manager	NO, command line and API only

Workload 별 인프라 적용 비교

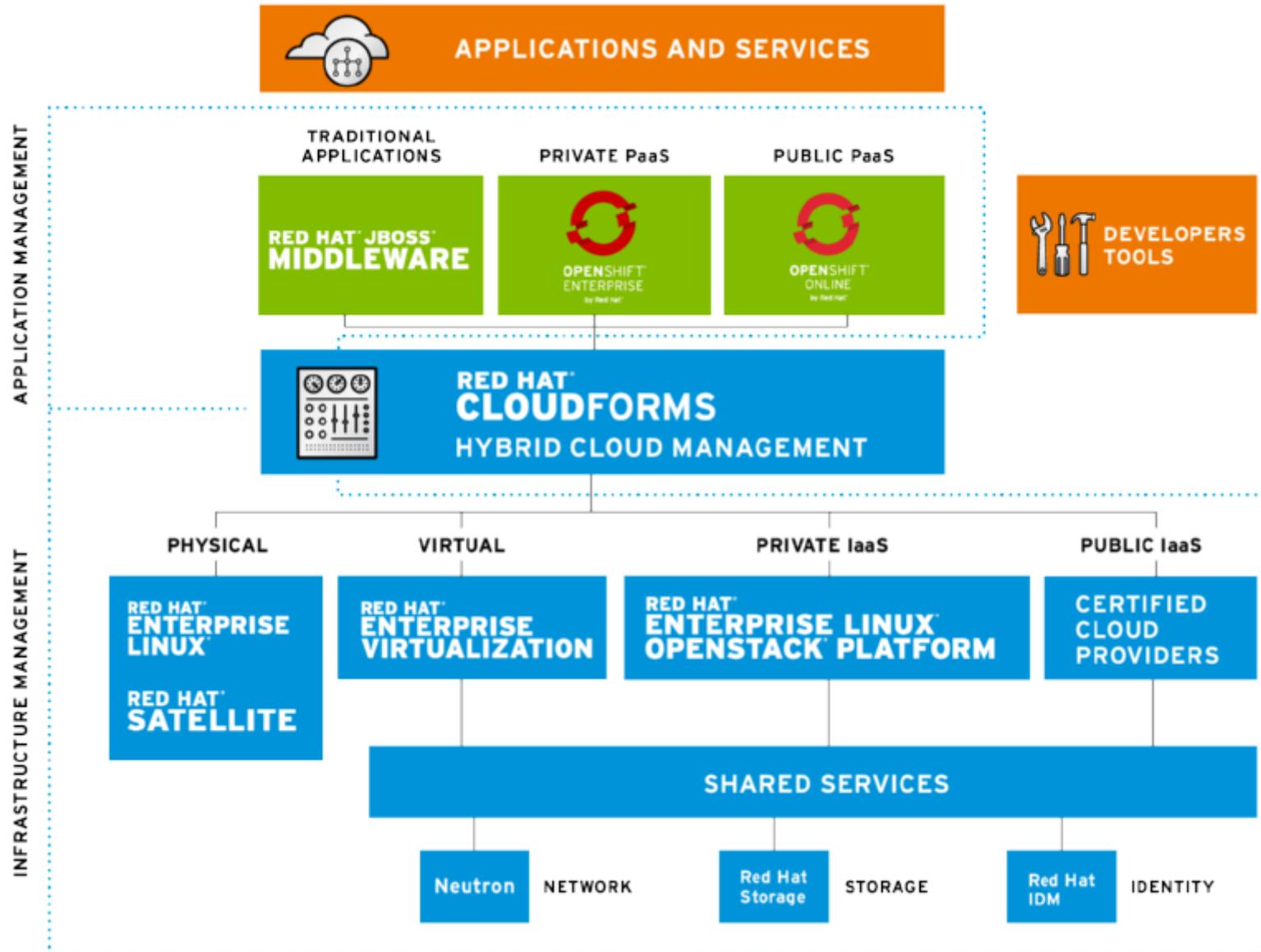
TRADITIONAL (RHEV)	CLOUD (OpenStack)	MIXED/HYBRID
Big stateful VM	Small stateless VMs	어플리케이션을 제공하는데 전통적인 가상화와 클라우드 방식을 조합.
1 Application → 1 VM	1 Application → Many VMs	
Lifecycle in years	Lifecycle hours to months	데이터베이스는 전통적인 가상화 Workload 위에 제공되고, 웹 및 로직 관련된 부분은 클라우드 Workload 위에 운영되는 조합.
Scale up (VM gets bigger)	Scale out (add VMs)	
VM 의 실패 -> app 장애 VM 이 지속성을 가질 수 있는 기능이 요구됨	VM 의 실패 시, app 이 해당 VM 을 kill 하고 새로운 VM 생성하여 지속성 유지	
Application SLA 는 application 의 가용성을 위해 enterprise virtualization 기능 (migration, HA, etc.) 요구	Application SLA 는 application 의 가용성을 위해 application Cloud 에 VM instance 를 추가 / 삭제 요구	

Agenda

- **오픈소스 트렌드 전망**
- **Red Hat Enterprise Linux Add-ons**
- **Red Hat Enterprise Virtualization**
- **Red Hat Enterprise Linux OpenStack Platform**
- **Open Hybrid Cloud - Red Hat Cloud Infrastructure**

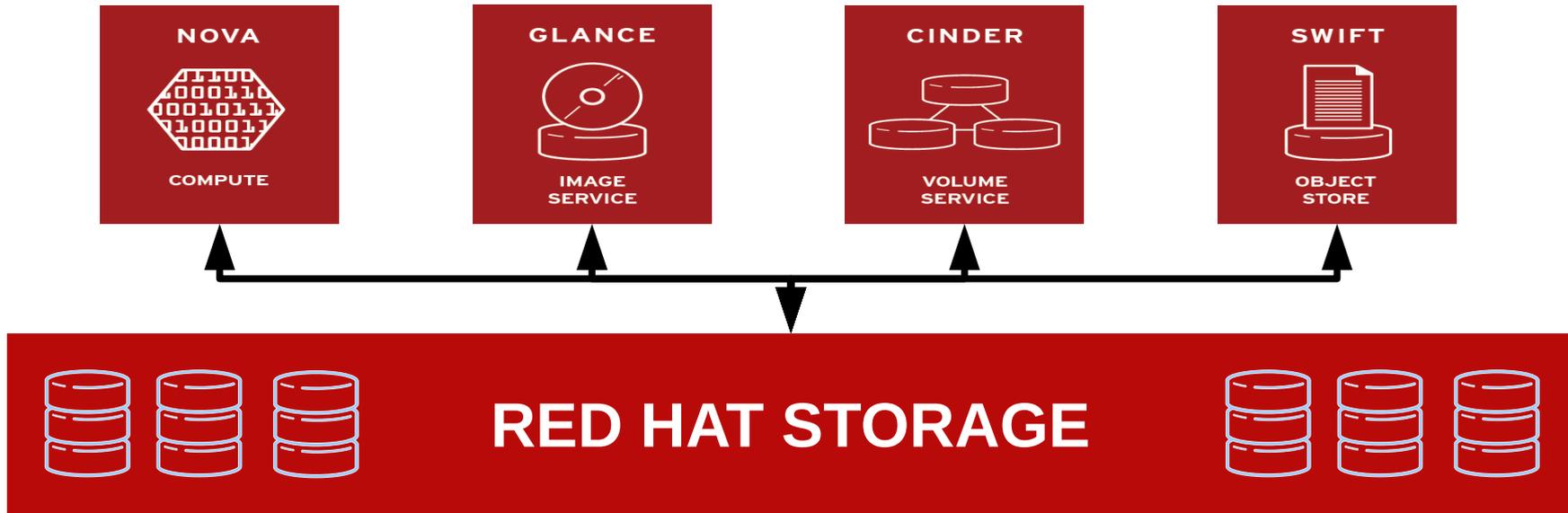
INFRASTRUCTURE-AS-A-SERVICE

Foundation for the Open Hybrid Cloud



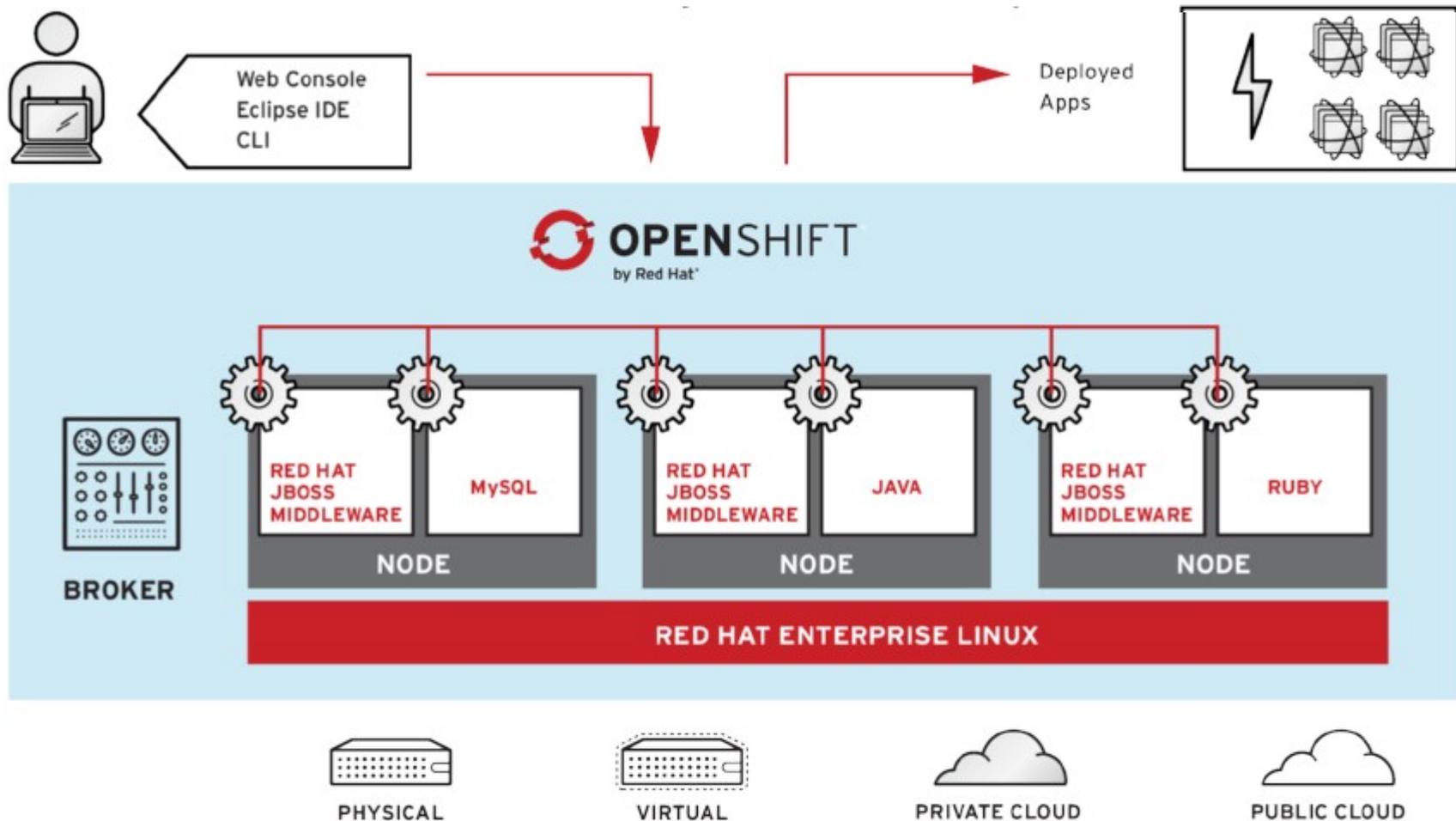
RED HAT STORAGE

레드햇으로부터 제공되는 포괄적인 클라우드 스택



- 모든 OpenStack 스토리지 인터페이스를 지원하는 단일화된 기업용 스토리지 플랫폼
- Peta byte 스케일의 대규모의 확장성, 탄력성과 고가용성 제공
- 광범위한 레퍼런스들로 입증된 기업용 스토리지 플랫폼
- Red Hat 이 개발하고 지원하는 인프라스트럭처 스택
- RHEL-OSP 의 스토리지 Add-on 옵션으로 선택 가능

OPENSHIFT ENTERPRISE PAAS SOLUTION

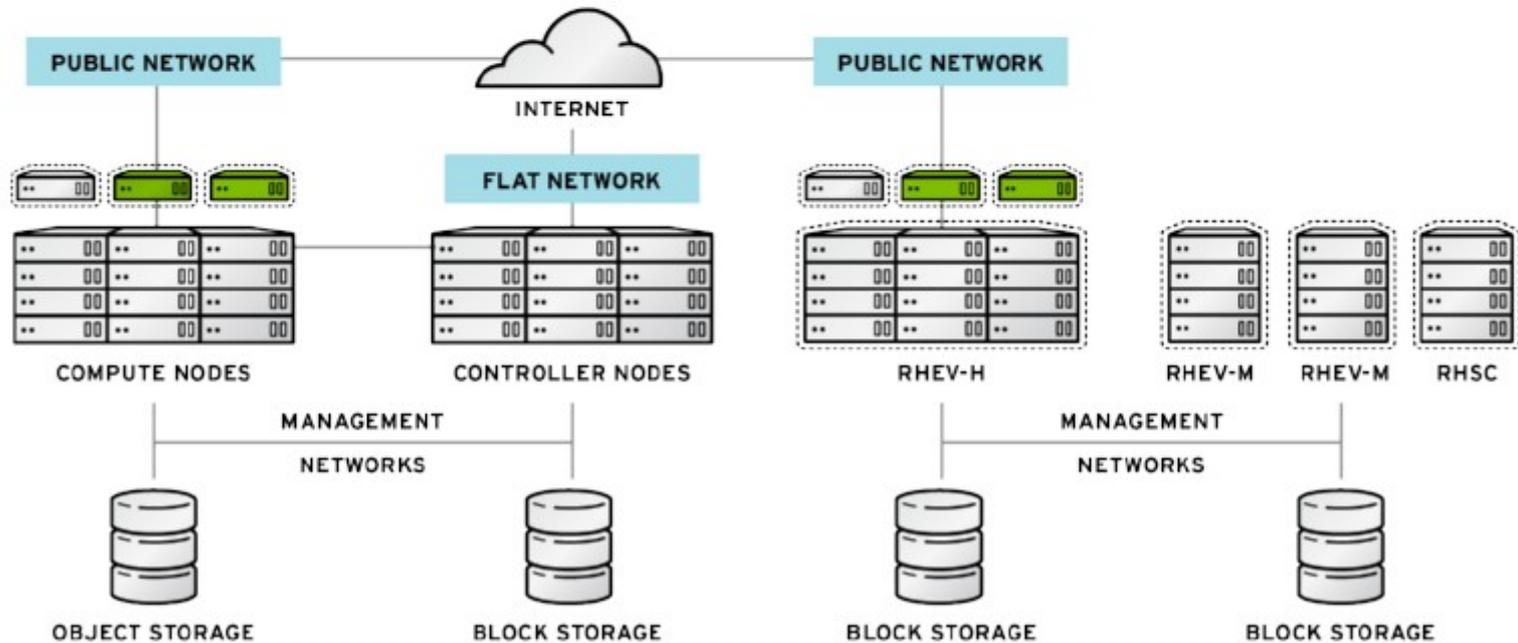
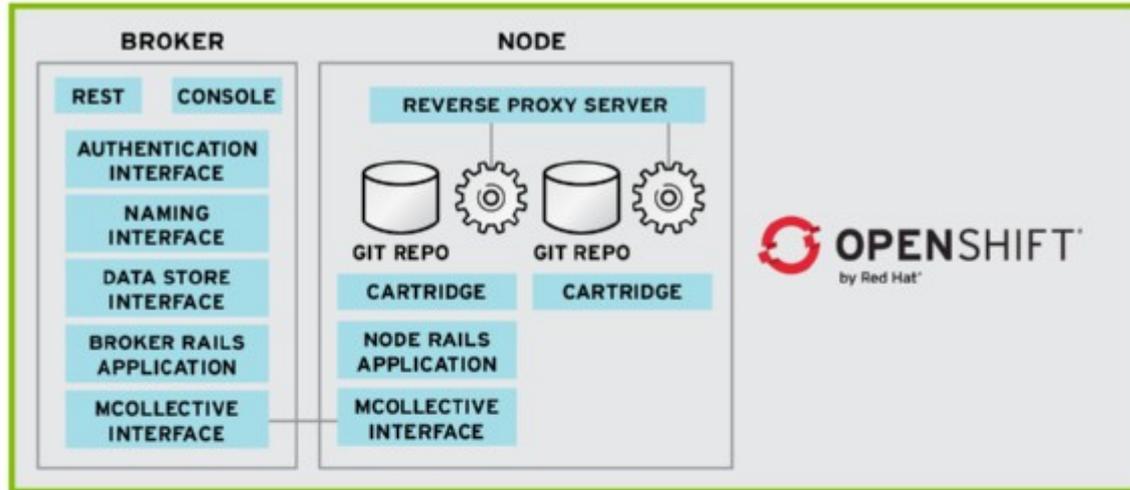


- Increase resource utilization beyond virtualization
- Automated provisioning of applications

- Standardize containers
- Automatic scaling

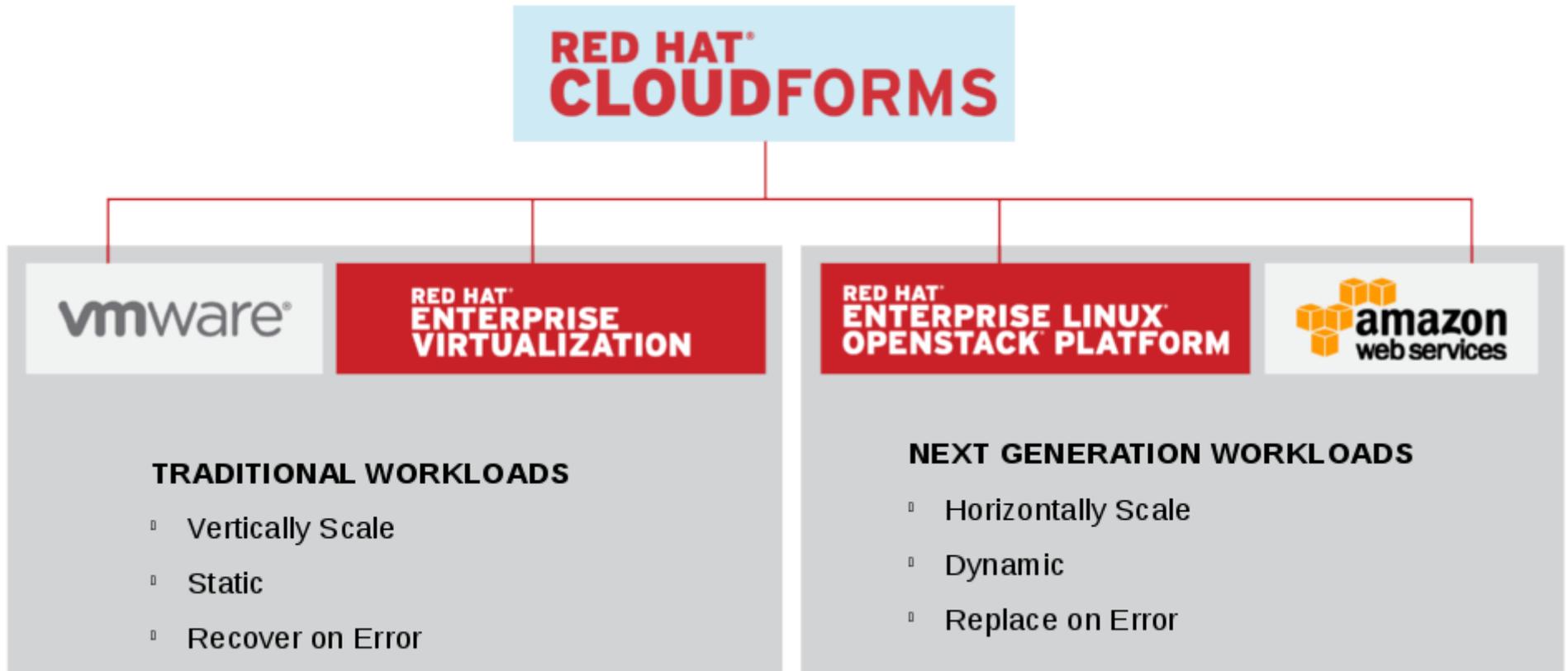
- Heat 를 통해 OpenStack 에 openshift 자동 배치: <https://wiki.openstack.org/wiki/Heat/Running-openshift>

OPENSIFT ENTERPRISE PaaS SOLUTION



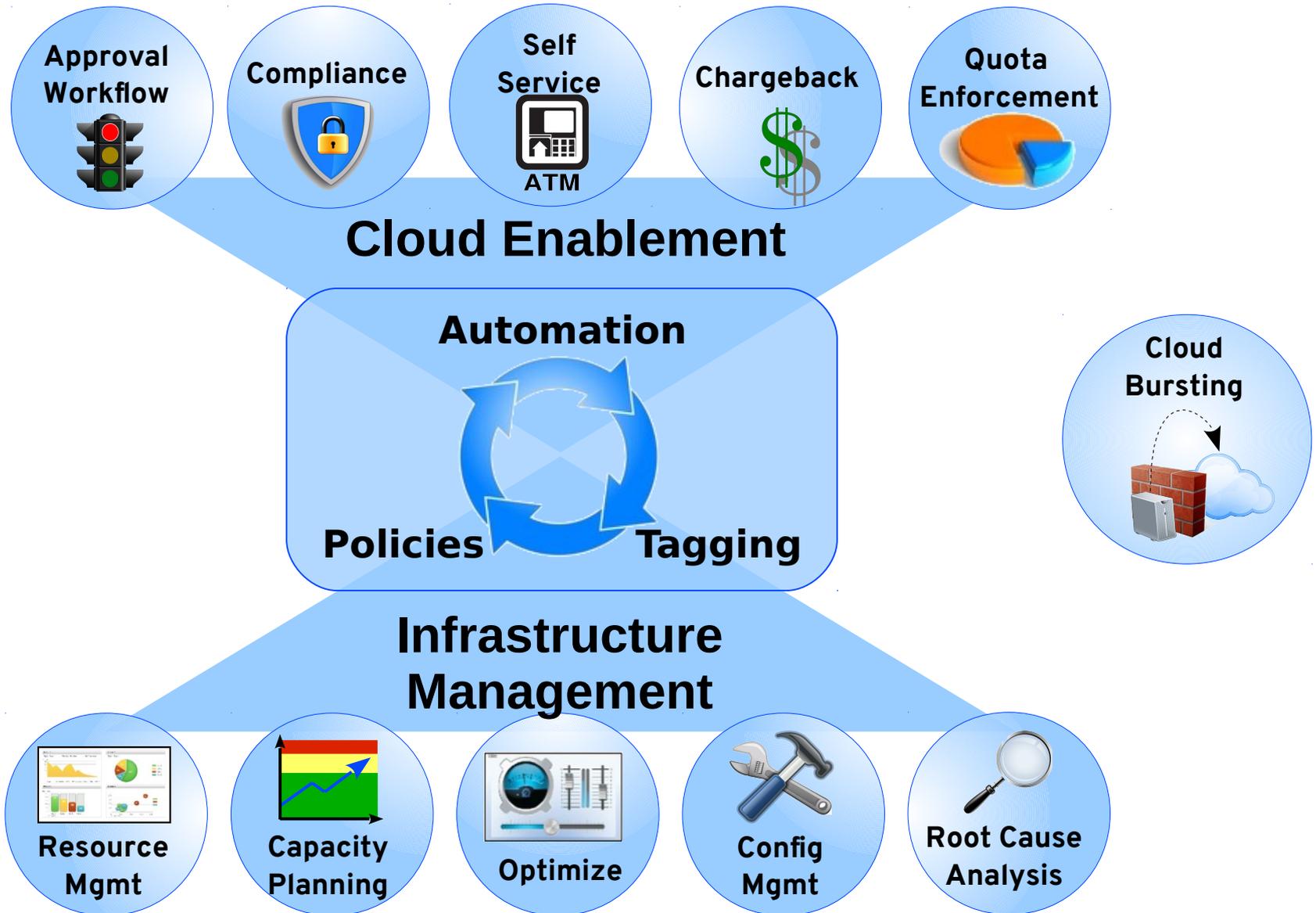
RED HAT CLOUD INFRASTRUCTURE

Virtualization to Open Private Cloud

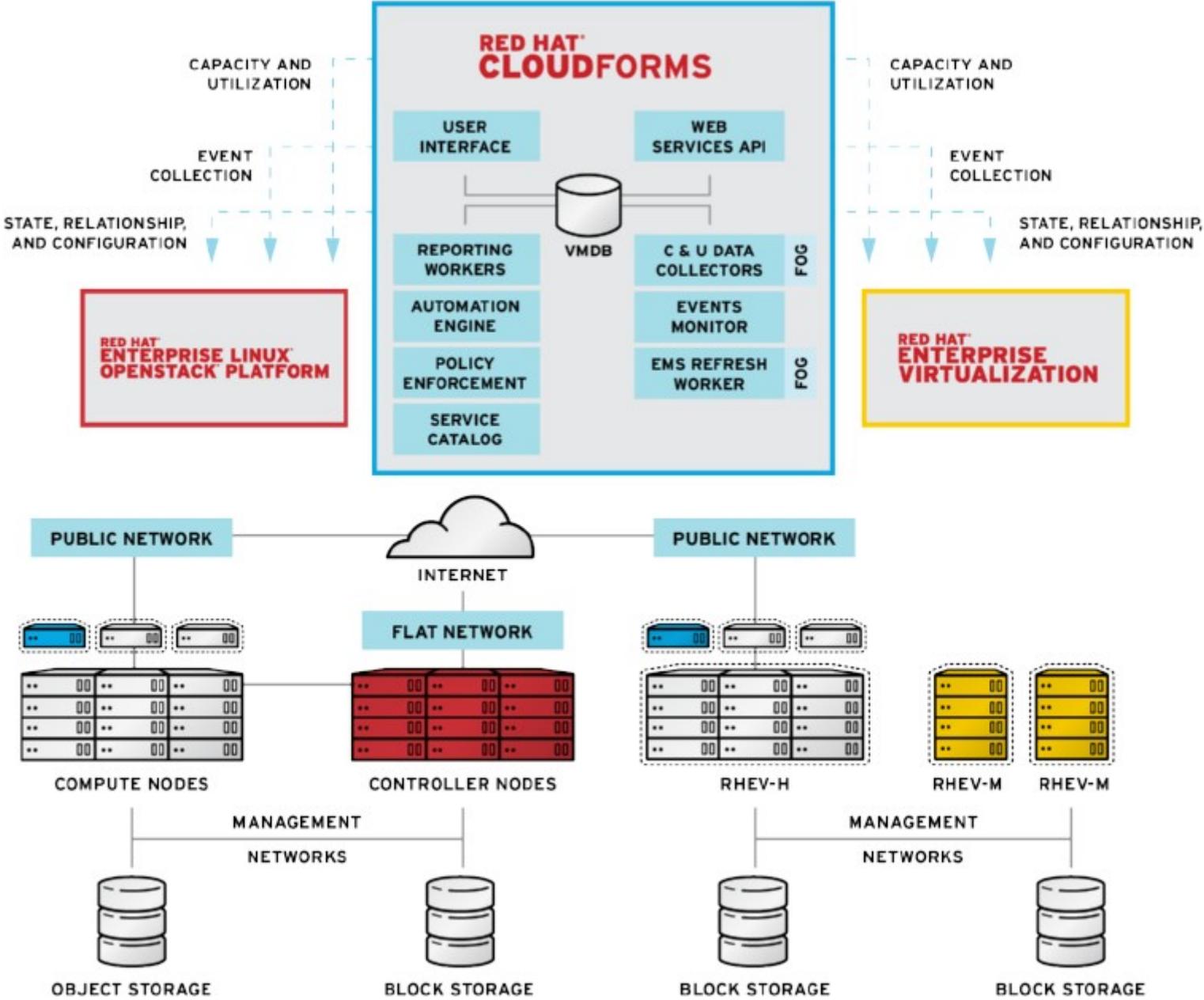


RED HAT CLOUDFORMS

인프라 관리와 통합된 Cloud Enablement



RED HAT CLOUD INFRASTRUCTURE



PLATFORM-AS-A-SERVICE



AGILE



FRAMEWORK AND
LANGUAGE CHOICE



DEVELOPER
PRODUCTIVITY

OpenShift Enterprise by Red Hat

CLOUD MANAGEMENT



SELF-SERVICE



ORCHESTRATION



INTEROPERABILITY

Red Hat CloudForms

INFRASTRUCTURE-AS-A-SERVICE



MASSIVE
SCALABILITY



ON DEMAND



INCREASED
EFFICIENCY

Red Hat
Enterprise Linux OpenStack Platform

Red Hat Cloud Infrastructure

VIRTUALIZATION



SECURE



COST
EFFECTIVE



HIGH
PERFORMANCE

Red Hat Enterprise Virtualization



감사합니다